

## **SECTION II—REMARKS**

The following remarks are provided in response to the Final Office Action mailed August 8, 2006 in which the PTO examined claims 1-66 and:

- objected to claim 1 due to informalities.
- rejected claims 1-16 and 19-51 under 35 U.S.C. § 101 as being directed toward non-statutory subject matter
- rejected claims 10, 15, 28, 43, and 61 under 35 U.S.C. § 103(a) as being unpatentable over US 5,752,243 to Reiter et al. (“Reiter”) in view of Cormen et al. (“Cormen”) (Introduction to Algorithms ISBN: 0262031318). Note: The PTO directed its arguments toward claims 1-9, 13-14, 16-27, 31-42, 46-60, and 64-66.
- rejected claims 10, 15, 28, 43, and 61 under 35 U.S.C. § 103(a) as being unpatentable over Reiter in view of Cormen and in further view of US 6,161,144 to Michels et al. (“Michels”).
- rejected claims 11-12, 29-30, 44-45, and 62-63 under 35 U.S.C. § 103(a) as being unpatentable over Reiter in view of Cormen, and further in view of US 3,725,875 to Choate et al. (“Choate”).

Applicants thank the Examiner for a thorough review, and respectfully request reconsideration of the above referenced patent application for the following reasons:

**Claim 1 objection**

Claim 1 is herein canceled without prejudice, and thus Applicants respectfully submit that objection is rendered moot. Applicants were careful not to reproduce the error, to which the PTO objected, in new claims presented herein. Applicants respectfully request the objection to said claim be withdrawn.

**Claim 1-16 and 19-51 rejection under 35 U.S.C. § 101**

Claims 1-16 and 19-51 are rejected under 35 U.S.C. § 101 as being directed toward non-statutory subject matter. Claims 1-16 and 19-51 are herein canceled without prejudice and thus Applicants respectfully submit that rejection to said claims is rendered moot. Applicants respectfully request the withdrawal of said rejection.

**First rejection under 35 U.S.C. § 103(a) for claims 10, 15, 28, 43, and 61**

Claims 10, 15, 28, 43, and 61 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Reiter in view of Cormen. Applicants respectfully point out that the PTO's arguments under this rejection were directed toward claims 1-9, 13-14, 16-27, 31-42, 46-60, and 64-66, rather than claims 10, 15, 28, 43, and 61 as noted in the PTO's rejection. However, claims 1-66 are herein canceled without prejudice, and thus Applicant respectfully submits that said rejection is rendered moot. Applicants respectfully request the withdrawal of said rejection.

**Second rejection under 35 U.S.C. § 103(a) for claims 10, 15, 28, 43, and 61**

Claims 10, 15, 28, 43, and 61 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Reiter in view of Cormen and in further view of Michels. Claims 10, 15, 28, 43, and 61 are herein canceled without prejudice and thus Applicants respectfully submit that rejection to said claims is rendered moot. Applicants respectfully request the withdrawal of said rejection.

**Claims 11-12, 29-30, 44-45, and 62-63 rejection under 35 U.S.C. § 103(a)**

Claims 11-12, 29-30, 44-45, and 62-63 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Reiter in view of Cormen, and further in view of Choate. Claims 11-12, 29-30, 44-45, and 62-63 are herein canceled without prejudice and thus Applicants respectfully submit that rejection to said claims is rendered moot. Applicants respectfully request the withdrawal of said rejection.

**New Claims 67-127**

**PTO arguments under 35 U.S.C. § 101:**

The PTO previously argued that now canceled claims 1-16 and 19-51 were directed toward non-statutory subject matter under 35 U.S.C. § 101. Refer to the August 8, 2006 Final Office Action, paragraph 4. Applicants herein present new claims 67-127 and respectfully submit that said claims are in condition for allowance under 35 U.S.C. § 101. Said claims “produce a tangible result” having been recorded on some “computer-readable medium,” as the PTO suggested was required in its August 8, 2006 Final Office Action, paragraph 4. Applicants refer to new claim 67 in particular which recites in pertinent part:

**“A tree data structure stored in a machine readable storage medium of a computer system to communicate information stored within the tree data structure in support of application(s) to execute on the computer system, the tree data structure comprising . . .”**

Applicants respectfully submit that “[a] data structure **stored in a machine readable storage medium ... to communicate information stored within ...**” is tangible and concrete and therefore addresses statutory subject matter. Said claim recites a tangible and concrete subject matter which causes a “physical transformation” to occur, wherein the result is stored on a non-volatile medium. Independent claims 83 and 97 include similar novel elements as independent claim 67. Accordingly, Applicants respectfully submit that new independent claims 67, 83, and 97 presented herein are directed toward statutory subject matter pursuant to 35 U.S.C. § 101 and are thus in condition for allowance.

New independent claim 114 presented herein recites “[a] **machine readable storage medium comprising content which, when executed, causes ...**” and therefore is likewise directed toward statutory subject matter under 35 U.S.C. § 101. Said claim recites a tangible and concrete subject matter which causes a “physical transformation” to occur, wherein the result is stored on a “non-volatile medium.”

As to all new dependent claims presented herein, specifically claims 68-82, 84-96, 98-113, and 115-127, Applicants respectfully submit that all are in condition for allowance as said claims depend on allowable independent claims. The claims each incorporate the novel elements of their respective independent claims as discussed immediately above, and therefore each is in condition for allowance.

**PTO arguments under 35 U.S.C. § 103(a) over Reiter in view of Cormen:**

The PTO previously argued that now canceled claims 1, 19, 34, and 52 were unpatentable over Reiter in view of Cormen (note that arguments were addressed toward claims 1-9, 13-14, 16-27, 31-42, 46-60, and 64-66). Refer to the August 8, 2006 Final Office Action, paragraph 6. Applicants respectfully submit that new claims 67-127 presented herein are in condition for allowance.

The PTO argues that Reiter discloses keys which include “a first and second value ... defining a range for that key.” Refer again to the August 8, 2006 Final Office Action, paragraph 6 which states in pertinent part:

“a root node ... including a number of sequential keys, each key including a **first value and a second value**, the first and second values of each key **defining a range for that key**, wherein the ranges of the number of key[s] are non-overlapping ... **whereas Reiter’s key values K1 and K2 are equivalent to the claimed first and second values [of the present invention].**”

Applicants respectfully disagree. Reiter **makes no mention or inference** that “each key [K1 and K2] includ[e] a first value and a second value ... defining a range for that key.” Refer to Reiter column 4, line 52-63 cited by the PTO in its August 8, 2006 Final Office Action which states in pertinent part:

“... **an MDB-tree is made of nodes.** FIG. 3A is a diagram that shows the format of a node 29. **The node 29 includes a key value table 26, a subnode table 27 and a data area 28. The key value table holds key values: K1 and K2. These key values act as search keys that are used in searching the MDB-tree.** The subnode table 27 stores pointers to subnodes: Pointer 1, Pointer 2, and Pointer 3. The subnodes may be other nodes or pointer nodes ...”

Reiter **does not disclose** that “each key includ[es] a first value and a second value ... defining a range for that key,” but rather that two keys exist, **each representing a single “key value.”** Refer to Reiter Column 1, lines 39-43 defining by example, Reiter’s meaning of “a key value.” Critically however, none of Reiter’s individual keys themselves, represent a range of values, as each key is a single value, it is incapable of representing a range, until it is paired with one or more other keys. Quoting from Reiter directly, Reiter states “an MDB-tree is made of nodes ... includ[ing] a key value table ... [t]he key value table **holds key values: K1 and K2**” and “[t]hese key values **act as search keys that are used in searching the MDB-tree.**” Refer to Reiter Column 4, line 52-57. Neither this passage, cited by the PTO, nor elsewhere, does Reiter make any reference, inference, or suggestion that said keys comprise anything more than a single value.

Conversely, Applicants teach that multiple “keys 114, 118 and one or more additional keys are all used to represent [a] range” (refer to paragraph 55 of the original application), but also that **a single and individual “key 114 covers a range from the lower bound of the range associated with data item A up to the lower bound of the range associated with data item B,”** hence, representing a range in and of itself, without being paired with other keys (refer again to paragraph 55 of the original application).

Thus, when Applicants recite in new claim 67, “a plurality of sequential keys, wherein each key comprises ...a first value to define a lower bound of the range for the key, and a second value to define an upper bound of the range for the key,” applicant refers not to a range of values between two keys as is discussed by Reiter, but rather **“a range for the key” in and of itself,** without the need for a second key as is taught by applicant, and recited in new claim 67.

Based on the preceding argument, Applicants respectfully submit that new claim 67 is in condition for allowance, as Reiter fails to disclose each and every element of new claim 67, as required under M.P.E.P. § 2131. Cormen does not cure the deficiency of Reiter, and thus cannot be used to make obvious independent claim 67. New independent claims 83, 97, and 114 include similar novel elements as new independent claim 67. Accordingly, Applicants respectfully request that new independent claims 67, 83, 97, and 114 be allowed.

As to all dependent claims, specifically new claims 68-82, 84-96, 98-113, and 115-127, Applicants respectfully submit that all are in condition for allowance as said claims depend on an allowable independent claim. The claims each incorporate the novel elements of their respective independent claims as discussed immediately above, and therefore each is in condition for allowance. Applicants therefore respectfully request that new dependent claims 68-82, 84-96, 98-113, and 115-127 be allowed.

**PTO arguments under 35 U.S.C. § 103(a) over Reiter in view of Cormen and in further view of Michels:**

The PTO previously argued that now canceled claims 10, 15, 28, 43, and 61, were unpatentable over Reiter in view of Cormen and in further view Michels under 35 U.S.C. § 103(a). Refer to the August 8, 2006 Final Office Action, paragraph 8. Applicants respectfully submit that new claims 67-127 presented herein are in condition for allowance. Neither Cormen nor Michels cures the deficiency of Reiter as discussed above, and thus cannot be used to make obvious new claims 67-127. Therefore, Applicants respectfully request that new claims 67-127 be allowed.

**PTO arguments under 35 U.S.C. § 103(a) over Reiter in view of Cormen and in further view of Choate:**

The PTO previously argued that now canceled claims 11-12, 29-30, 44-45, and 62-63, were unpatentable over Reiter in view of Cormen and in further view Choate under 35 U.S.C. § 103(a). Refer to the August 8, 2006 Final Office Action, paragraph 9. Applicants respectfully submit that new claims 67-127 presented herein are in condition for allowance. Neither Cormen nor Choate cures the deficiency of Reiter as discussed above, and thus cannot be used to make obvious new claims 67-127. Therefore, Applicants respectfully request that new claims 67-127 be allowed.

## **Conclusion**

Given the above amendments and accompanying remarks, all claims pending in the application are in condition for allowance. If the undersigned attorney has overlooked subject matter in any of the cited references that is relevant to allowance of the claims, the Examiner is requested to specifically point out where such subject matter may be found. Further, if there are any informalities or questions that can be addressed via telephone, the Examiner is encouraged to contact the undersigned attorney at (503) 439-8778.

## **Charge Deposit Account**

Please charge our Deposit Account No. 02-2666 for any additional fee(s) that may be due in this matter, and please credit the same deposit account for any overpayment.

Respectfully submitted,

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